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Master's Thesis
Academic Year 2018

Interactive Storytelling: AR Reality Riddle Game
of Hakka Traditional Culture

Keio University
Graduate School of Media Design

Liyang Yu

A Master's Thesis
submitted to Keio University Graduate School of Media Design
in partial fulfillment of the requirements for the degree of
MASTER of Media Design

Liyang Yu

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Professor Masa Inakage	(Supervisor)
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Abstract of Master's Thesis of Academic Year 2018

Interactive Storytelling: AR Reality Riddle Game of Hakka Traditional Culture

Category: Design

Summary

This research aims to improve young generation's interest about their own traditional Hakka culture. Through combining storytelling, AR technology, riddle game and historical site together. We designed a game experience which connected the fictional world and real world together, also by changing the contents, it could be suitable for any other traditional culture and historical site too.

Based on the Xinwawu area. We developed the game application Do you remember? in IOS system. it's been proved that it's a more enjoyable culture learning experience for the young generation by tested it in the Xinwawu historical site.

Keywords:

Storytelling, Interactive Design, Culture Experience, AR, Education

Keio University Graduate School of Media Design

Liyang Yu

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Chapter 1

Introduction

1.1 Storytelling in education

Storytelling is always being a creative way to connect us with the people around us. Link our past, present and future together. And it's being used as an powerful way to explain complex things, to communicate, bring the information to life, connecting learning and understanding across almost every subject areas. As human being, when the information is been put into an interesting story, and it is becoming easier to remember. From the 1400s, the print technology begun and books became popular. Until the 1800s, stories were mainly used to educate children. In the 1980s, film, radio and television created a new way of storytelling. And as the continue development of technologies, digital devices like multi-functional cell phones, and personal computers are being used in education too. Meanwhile, digital storytelling became one of the method for using these digital devices during the learning process. In the digital Storytelling Association (2002) describes it as " A modern expression of the ancient art of storytelling. Throughout history, storytelling has been used to share knowledge, wisdom, and values. Stories have taken many different forms." ¹ Nowadays digital storytelling is being used as an education method to creating stories that make students could improve their information collecting and problem-solving skills.²

1.2 Background

Modern environments and experiences cut across all boundaries of geography and ethnicity, of class and nationality, of religion and ideology: in this sense, modernity can be said to unite all mankind.³ Meanwhile with the rapid industrialization of society and the development of urbanization combined with the new technology, people's life are filled with a lot of information, things became easier to be

collected just on their phone, also it's easier to be distracted by those interesting information, and they tend to lose interest about their own traditional culture. Especially, for the young generation, they been having an obsession with all those new AR and VR technology, and all that old traditional history and crafts is becoming old fashion to them, they don't want to spend their time to learn about their own traditional culture knowledge. And since the generation is stopping care about old history, and in the future, maybe we will lose that unique part of our traditional culture.

Taiwan Hakka traditional culture

Like China, Taiwan also has several different ethnic group. Each ethnic group has their own language and traditional culture. Hakka culture is one of them. Literally, Hakka means guest families. And back to the Ming Dynasty, in a series of migrations, Some Hakka moved and settled from Southern China to Taiwan.⁴ Nowadays, Hakka is the second largest of four major ethnic groups in Taiwan. The population of them is a quarter of the total population of Taiwan: More than 5 million people, and nearly 400,000 in Taipei city. Most of them are living in the Tao Zhu Miao area. And they have their own language, architecture, food, and festival To preserve their traditional culture, Before the establishment of the Hakka Affairs Council, they used to conduct activities in the communities. For example, in the National Festival of arts in 1994, they had Hakka Folk Singing Festival in Xinzhu county, and held Hakka cultural relics seminars in Miaoli county⁵ Hakka Affairs Council⁶ was established on June 2001 under the Democratic Progressive Party government. And the Council has the responsibility to deliberate, coordinate, and promote of all local and overseas Hakka affairs including Hakka language, festival, food culture and so on. And they been putting all the affair information onto their website. Such as the collaboration with Hakka and another country, the new Hakka food television show. But it's hard hard for people to follow all the information on the website and gathering together from all over Taiwan to join the activity. And for the young generation, except their fast pace lifestyle, they are losing interest about their own traditional culture.

On 2008, With one of the Taipei City Hakka Affairs Commission's project, they founded The Taipei City Hakka Cultural Park.(Figure1.1) Hakka Affairs Council⁷It is a recreation spot that offers knowledge of Hakka culture, as well as a place for Hakka people to gather and interact. It is a place that designed to be where the public can experience daily like in a Hakka village and Hakka people



Figure 1.1: Hakka Culture Park. <https://ssl.thcp.org.tw/>

could relive memories. In the park, they have different Zones to let the public can have Hakka culture experience, such as Rural experience zone, like ecological irrigation channels to let them to have the Hakka agriculture experience, Hakka culture center , which use different multimedia facilities to help people learn Hakka culture, and food court which provide Hakka dishes. But still, like other Hakka museum in Taiwan, the information it's been pasting on the walls, and people need a guide to go through almost every experience. For some people, they think it's not attractive enough to learn the culture through a guide or exhibition, and after learning all the information about Hakka, it's difficult for them to remember everything. Also since the Hakka Cultural Park is only in Taipei, so for the people who is not living in Taipei, it's difficult to participate in those culture experiences, and it's important to have new culture experience in their local area too.

And also, to preserve Hakka traditional cultural, they have several Hakka studies(Figure1.2) in different University, and for the students who study in the Hakka studies, except learning their own major, they have class about Hakka language, history, literature, economy and so on. But for the young students, learning from the textbook and taking exams is not an interesting way to learn Hakka culture.



Figure 1.2: Hakka Studies

In this research, we been collaborating with Taiwan Jiaotong University⁸, focusing on the Xinwawu area which is one of the historical site of the Hakka culture. The place is near Jiaotong University's campus and residential area, but still don't have a lot of visitors. Even people come to the Xinwawu area, the only way to

learn Hakka culture is to following the guide and listening all the history story. And for the young generation, usually they won't choose to follow a guide, they just walk around and take some pictures, which means they couldn't learn any Hakka culture through it. And it's necessary to have a new approach to make them interested in their own traditional culture, to learn the unique part of it, and to remember after learning it.

1.3 Motivation



Figure 1.3: Fan Xiao Scene.<http://redcandlegames.com/detention/?lang=jp>

History combined with storytelling

People often learn history through lessons and books. However, sometimes the content is too difficult to understand, and it's also too boring to read. Even it's their own country history, people still feel it's far away with their life. On January, 2017, there was a video game called Detention(Figure1.3),⁹ it was very popular in younger generation. After it was released on the Steam, it got 3 stars review only in 3 days. Detention is a survival horror adventure 2D video game. To play the game is very simple, the only thing players need to do is to use mouse to control the character. The time was set in 1960s Taiwan under martial law. The whole game is incorporated with religious elements based on Taiwanese culture and mythology. The story is about during Taiwan White Terror period, students Wei and Ray found themselves was trapped in Greenwood High School which is located in a remote mountainous area. The place they knew has been changed in a horror way, and it's easy to be haunted by the evil creatures which is known as the Lingered. Player need to hiding from the evil while find the mysteries of the cursed school.

The game is black and white, dark artistic style, strong local culture atmosphere, realistic and consistent background music, all together created a terrific atmosphere. Even the players couldn't take the time machine to actually go back to the White Terror period. But through the whole the game, players could become the main character and have the culture experience back to that time.

1.4 Main Goal of this project

The main goal of this project is to improve the younger generation's (15-25 years old) interest in Taiwan about their own traditional Hakka culture, making the learning experiences more enjoyable, and design a new game experience which is suitable for any historical site or traditional culture. In this thesis, we combined the storytelling, AR technology, and the riddle together. Design and develop a AR game that based on one of the Hakka historical site, which is Xinwawu area. Through the whole story of the game, players could go back to the old time and have a new game experience.¹⁰ about Hakka tradition culture, such as their religion, agriculture, history, language, festival, food and so on. Instead of the traditional education mode, through the game experience players could learn the Hakka knowledge by themselves.

1.5 Thesis Structure

Chapter 1 is about the background, motivation and goal of the project. Chapter 2 is about the present related work on how new technology is combined with real place, how storytelling is been used in the riddle games, and how the storytelling is combined with traditional culture. And based on chapter1,2. Chapter 3 is the whole concept design and the fieldwork of the game Do you remember?. Also chapter3 included the whole game play process. Chapter 4 is the evaluation of the game test result. And the chapter 5 is the conclusion and future possibilities about the game.

Notes

- 1 Digital Storytelling Association. (2002).Retrieved November 28, 2005,
<http://www.dsaweb.org/01associate/ds.html>
- 2 Janice,McDrury. Maxine Alterio Learning Through Storytelling in Higher Education in*Using Reflection and Experience to improve Learning*,(Janice 2003)
- 3 Ronnie D. Lipschutz *Reconstructing World Politics: The Emergence of Global Civil Society*, December 1, 1992
- 4 Zhengguang, Xu*The introduction of Taiwan Hakka Culture*,(Zhengguang 2011)
- 5 Jinyu, Zeng*The research on Taiwan Hakka Campaign* Jinyu (1999)
- 6 Hakka Affairs Council<https://www.hakka.gov.tw>
- 7 TAI PEI City Hakka Culture Park <https://www.hakka.gov.tw>
- 8 Taiwan Jiaotong University<https://www.hakka.gov.tw>
- 9 Detention<http://redcandlegames.com/detention/>
- 10 Jesse Schell*The Art of Game Design*,(Schell 2014)

Chapter 2

Related Works

2.1 Storytelling and AR technology

About how to link the fiction world with real life, many things look very general, in fact, there are multiple ways to make people thinking, like bowing is a very common phenomenon in younger generation, everyone is focusing on their phone, but the interactive game could cull people back to reality by combine the real world and fictional world together. Patrick O'Shea. Chris Campbell(2018)*The Theory and Process Involved with Educational Augmented Reality Game Design* (Campbell 2018)

Spatial Augmented Reality is a rapidly emerging field which concerns people who is interested in cutting-edge technology of display and computer graphics. In the book of Spatial Augmented Reality Merging Real and Virtual Worlds. Oliver Bieber describes it is becoming more accepted, because augmented reality has been dominated in involving mobile devices. ¹

On 2015, There was a AR game became popular in the young generation of Taiwan, called Eleanor of Ayer(Figure 2.1).² It is a multiple ending mystery augmented reality puzzle room-escape game that follows a murder case. Won Best AR Experience award for Vision Summit 2016 VR/AR award. In this game, players need to request a tablet from the waiter, and use the camera in a real-world cafe to find clues of the game, and solve several puzzles to continue the story. The story of this game is about a murder case of Shove, who is the vocalist of the fictional rock band called Lunacy, before his death, Shove left a dying message On that day, you said you wanted to go travel. I know you, so I let you go. The strange thing is that before you leave, you left that necklace you never left and a wooden box I had never seen before and the message was pointing the bands drummer to be the suspect. And the players need to follow the story and find the truth.

The developer of this game said The world around you is not only just that.

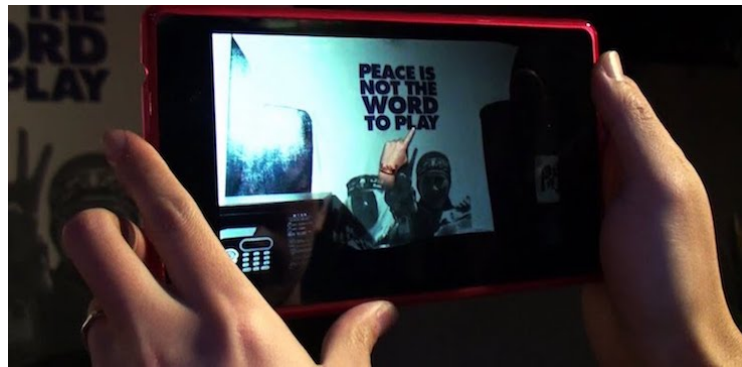


Figure 2.1: Eleanor of Ayer Game Contents. <https://gnn.gamer.com.tw/9/121309.html>

In this game, they created a new experience for everyday life through combining the game experience with virtual realities, through AR technology to let players enjoy the fictional story in the real world instead of the on-screen feeling like digital game. And the location is very important too, they choose the cafe and serve customers as usual, so for the players they could enjoy the food and game together. And another point about this game is that it has multiple endings, different bias will lead to different scenarios. So it could awakens people's curiosity of the story.

2.2 Storytelling and Real Place

One way to make a place becoming more interesting is to make it become narrative. To let the visitors could have the same feeling that a character has in the same place. To make the same place has new definition, and every elements in that place could have a new meaning to the visitors. That makes a lot of companies continue designing the reality riddle game to make the same place become more attractive.



Figure 2.2: Nankai Line: Detective Conan. <http://nazotomo.com/meitantei/2018/>

Nankai Electric Railway's first round trip mystery solving game was hold on 2017, it's a riddle solving game included 1 day free ticket of Nankai Railway. In this game, Players themselves could become detectives, travel around various places to solve the case. And the story was set on the Nankai line. So as people who

living on the railway line or coming from outside, could know the charming part of the Nankai Line. And also since the story was base on the popular animation Detective Conan(Figure 2.2),³ and in this time, players could be Conan and solve the mysterious incidents.

The story is about the victim Yoko Sanniyi died at Nankai Namba Station. Four friends of him (Sakurabi Goro, Wakamiya KAYa, Yoshida Akiko, and Ohio Toru) planned the Kansai trip on that day because he wanted to have a surprise propose to his girlfriend Ishige Mio And the crimial is one of them. So as the story continue, players need to get out of the train several times, go to different places to find the hint. Like Sumiyoshi Taise, one of the tourist spot, in here, except finding hints, players could also enjoy the history and elements of the place.

Another example is called The last stronghold of the Edo Shogunate(Figure 2.3)⁴ which is a reality riddle game about Osaka castle. While walking around in the Osaka Castle Park, participants need to take communication and exchanging messages with the character by using the smart phone, find the hint of puzzles around them. In the game, participants will get a history book from a old book store, and asked to investigate an historical mysterious case depend on a strange page in the book. When players found that document, they will be transferred back to the Keio three years (1867).

The story was based on a historical event Taiseihokan. The 15th Shogun of the Edo Shogunate, Tokugawa Keisuke, was threatened by Sakyamani's ally. He said he will return the regime back to the Emperor and establish a new government on Minamikawa. In fact, He is still hold the power. The president of Sakyamani's ally was objected to this resolution decided to set up a military coup which lead to Bosnia War. In the end they had a negotiation, Tokugawa was under house arrest, and Edo period came to an end. In this whole story, players could have a new experience about going back to the history in the actually historical site and become a part of it, and through having the conversation⁵ with the Tokugawa Keisuke to solve the puzzles.

For the participants, both game created a new experience in the tourist spot. By following the story, it's not only about enjoy the puzzle, and also can learn something by exploring the environment themselves. Like the example of The last stronghold of the Edo Shogunate, even for the people who dont know that history event at all, this time they can learn the it by themselves, instead of being a student, sitting in the classroom. Participants could have a real connection with the history. And also, both game have been using a famous character, Conan is



Figure 2.3: Osaka Castle Reality Game. <https://nazoxnazo.com/osakacastle3/>

famous in the fiction world, and Tokugawa is famous in the history. Usually a unique character could make a game become more attractive. However It's also important to control the difficulty of the puzzle, because if the participants was spend too much time at one spot, they will lose their patients to continue the story.

2.3 Storytelling and Traditional culture

As we discussed in the chapter1, for many young people, they are losing the interest about the traditional culture. Many traditional arts are facing one same problem, which is there is no-one want to continue learning it, and some of them is even on the verge of loss.⁶ One of them is Chinese traditional culture Shadow Play. And to preserve those traditional culture, in many research, people is been trying to combine the new elements with the traditional culture together.⁷

In China, the Wuhan University's students designed a RPG video game called Reincarnation: Lost Soul.(Figure 2.4) In this game, the developer integrated the Shadow Play style into the game, and all the characters in the game are played in the form of the Shadow Play. All the inspiration was coming from the old Chinese Myths and Legends.

The story is about Asian's Hell and Reincarnation. In Eastern mythology, hell is a place for dead people to survive. The whole world is divided into three parts: heaven. earth and hell. Literally: it's the world in the sky, the living world, and the world after death. Every person, every soul must experience reincarnation. The game used the concept of hell in Buddhism. In this hell, it is the place where each soul stays before reincarnation. When a person dies, every soul will be judged by judges. According that, each soul will be sent to the different level of the hell. The judge suppose to be always right until the beginning of the story. The main character White was murdered at the beginning of the game, but his soul was sent to the Red Lotus, which represents the place that evil soul's living place. After he died, White lost most of his memories. The only thing he remembered was that he was murdered, and his father and daughter are still waiting for him, so he started to fight.

By playing this game, players could have a new experience about the traditional culture of Shadow Play, and learn the Eastern mythology. However, on of the unique part of the Shadow Play, is to control the character by long strings with hand. So since the game is just in the screen, it's still lost the Shadow Play



Figure 2.4: Reincarnation: Lost Soul. <http://www.gamersky.com/news/201705/901671.shtml>

is interactive part with the players.

2.4 Contribution

Above all the related work we been discussed. Since the young generation is more interested in the new technology, and they been having a bowing lifestyle for a long time. AR technology could be used as one method that pull the people back and have an interactive experience with the real world. But for now, most research is more focusing on the entertainment part, there is only a few research about how to combine the AR technology with the traditional culture, and how to make participants could have a new culture experience.

Also using story and characters could make one culture experience more attractive. Using screen is one way, like digital RGB game, but just like the game Reincarnation: Last Soul, sometimes losing the interactive part during the culture experience, somehow participants couldn't feel that unique part of traditional culture. So it's important to combine the fictional world and the real world together. To let the participants having the whole real experience by themselves, and willing to explore the answer by themselves. In this research, to make the history come out from the textbook and museum, and improve the young generation's interest about old traditional culture in an entertainment way. This time, based on one of the Hakka historical spot, we combined AR technology, storytelling and riddles together, designed a game called Do you remember? to let the residents and young generation could have a new interactive Hakka traditional culture experience, learning everything naturally.

Notes

- 1 Oliver, Bimber. Ramesh Raskar(2005)*Spatial Augmented Reality: Merging Real and Virtual Worlds* (Oliver Bimber 2003)
- 2 Eleanor of Ayer
<https://www.youtube.com/watch?v=teathNtgUjs>
- 3 Detective Conan
<http://nazotomo.com/meitantei/2017/>
- 4 The last stronghold of the Edo Shogunate
<https://nazoxnazo.com/osakacastle3/>
- 5 Nick Montfort*Riddle Machines: The History and Nature of Interactive Fiction* Montfort (2007)

- 6 Conrado R. Ruiz Jr. ; Nor Hidayu Salimi ; Sujitra Chodnok ; Pham Trung Ha *Exploring Traditional Art and Culture in Modern Computer Games* Ha (2009)
- 7 Josef Froschauer ; Max Arends ; Doron Goldfarb ; Dieter Merkl *A serious heritage game for art history: Design and evaluation of ThIATRO* Merkl (2012)

Chapter 3

Design

3.1 Concept

In this thesis, the concept is about improve the Taiwan's younger generation's(15-25 years old) interest about their own traditional Hakka culture. Design a new experience which is suitable for every historical site, make the serious traditional spot to become an entertainment place. Let the residents and young people could learn the traditional Hakka culture through having an interesting interactive experience.

Since the younger generation is been obsessed with the new technology, so at first we been thinking about through use the AR technology to design a game that could combine the fictional world and the real world together. We named it Do you remember?, which has two meanings, one is connected with the story, and another meaning is more like a question Do you still remember traditional Hakka culture?

3.2 Fieldwork

To design the game, at first we need to find the elements of the game, and learning all the Hakka traditional culture. Also we need to have real game experience to get the inspiration about our game. So we did two fieldworks, one was in Taiwan, to learn the culture, collecting the information. Another one was in Japan, to participant in the reality game, find the inspiration of contents.

Field work in Taiwan

We went to Taiwan twice, on 2ed August, 2016 and 22ed December, 2016. Both were about to do the research of Xinwawu area, understanding it's history, check-

ing all the spot that we could use, also learning the Hakka traditional culture.



Figure 3.1: Zhongxiao Hall

Xinwawu area is located in the Xinzhu County, according to the Hakka population data, 70 percent people of Hakka was living in Xinzhu County. Qing Jailing 10 years (1805AD). Sun Tangong along with Lin Sunzhang, Lin Xiankun and his son migrated from Guangdong Province to Taiwan, settled down in the Mangtopu area and build the Xinwawu house. Xinwawu is a roofed house like a closed village surrounded by walls. And the center of this area is Zhongxiao Hall. Zhongxiao Hall (Figure 3.1) is t typical Sanheyuan (Figure 3.2)house in Hakka culture. Sanheyuan has a central building with two wings attached vertically to either side. The central building is used as living room, and usually in this living

room, Hakka people will put their ancestor's picture in the center, and worship it every morning to show their respect of them. And the other two room is being used as bed room of their children, when they getting more people in the family, they will continue build new houses behind that two bed rooms as new bed room.



Figure 3.2: San heyuan. <http://subtpg.tpg.gov.tw/web-life/taiwan/9512/9512-07.htm>

Also, only Lin family could live in Xinwawu, and in this area, except Zhongxiao Hall, they also have several remains from 100 years ago, like an old well and a kitchen. Behind the remains it's their small farmland, but enough for their own family. Nowadays, they still use it during the summer time.

The place we could use is not only in this area, there are several other spot like Hakka studies campus, other Sanheyuan, and small temples. During the visiting tour, the guide told us that for Hakka people, they believe in a lot of Gods, worship them for different things, and they have different temple for different God.

From this investigate of Xinwawu(Figure 3.3) area, we found out this place has it's own special history and unique part, it is something you can never experience at the museum. But when the visitors come to Xinwawu area, the only way they can learn is to follow the guide, and listen. The pleasure of culture experience was being greatly reduced.

Another special thing about Hakka is their tea culture. And during the fieldwork we went to the Beipu street together to learn their tea culture. It's call Leicha. (Figure 3.4)For Hakka people, Leicha is not just some tea they like drink, it's also their food. It's very simple to cook, they will put several healthy ingredients into a bowl in order. Crush them, and after mixing all the ingredients



Figure 3.3: Xinwawu Area

together, just need to add the hot water. Then Leicha is done. Trough making it by ourself, we found out even the recipe sounds very easy, however it was actually hard to make it, cook Leicha need strength and patience, the longer time you keep crushing the ingredients, the better taste you will get.



Figure 3.4: Leicha Experience



Figure 3.5: Leicha Experience in Japan

Before we made Leicha experience became one of our element in the game, we did some test in Japan to see how young generation will react when they have this tea culture experience while they dont know anything about it. We did the experience during the 2016 KMD Forum (Figure 3.5) period. We tested 70 person

in total. And for most of our test subject, they are students. After the making Leicha experience, most of them think even it was hard to make, but since the receipt is simple, healthy, and easy to remember, so they would like to try at their home too. Trough all doing it by themselves, they told us, the whole experience became more impressive to them.

Field work in Japan

Since we want to make a connection between the fictional world and the real world. We decided to choose three reality riddle game to get inspiration of our own contents.

Mysterious City Under A Spell

Mysterious City Under A Spell(Figure 3.6) ¹ is a reality riddle game combined with a magic story. around the Otemachi line, Marunouchi line, and Yurakucho line. At first, players need to buy the riddle kit at the specific book store, after that, they need to use their phone to scan the QR code in the kit, then the smart phone will automatically open the game website to start the game. In the story, there was cat showed up on the screen, and start to talk to you, asking for your help to find out the magic that has been lost, there were five spells that been lost in total, which is metal, wood, water, fire, and earth. Five spells was been divided into five missions, players need to follow the cat to find the first place and solve the riddle on the kit, the answer was hide in the place. After solving the riddle, players need to text the right answer into the smart phone, then the cat will show you the next place. And since the area is too huge to walk around, so they prepared the free ticket of bus to transfer from one spot to another.

All the hints of the puzzles was connected with the real place, and it was fun to actually find it by ourself. Also this game didn't have the time limitation, so players can play as long as they want. But the problem is, for the beginner of the puzzle game, as the mission continue, the puzzle was getting more and more difficult, we spent a whole afternoon for this game and still didn't clear all the missions, and since we spent a lot of time and still couldn't solve the puzzle, we lost our patience and gave up in the end.



Figure 3.6: Mysterious City Under A Spell. <https://www.nazotown.jp/show/ligare/>

Escape from the night drifting aquarium

Escape from the night drifting aquarium² (Figure 3.7) was a reality riddle game that held in the aquarium during the night. Since the space was limited, so the players was also limited in 60 people, after all of them gathered in the aquarium, the story was began with a show of the staff. In the story, this aquarium is not just the normal aquarium, it was a aquarium that drifting on the ocean. The acrobatic show was popular in the ocean, and on that night, a big event was planned for the first public release. It's a show about Golden shining dolphin that just captured. However, just after the dolphins appearance, the tornado was coming to the aquarium's direction at a tremendous speed, and the aquarium was in danger of sinking. This strange situation seemed to have a connection with the crime of captured a Golden shining dolphin. And all of the people were trapped in the aquarium. Players only have 60 minutes to solve all the riddles and escape from the aquarium.

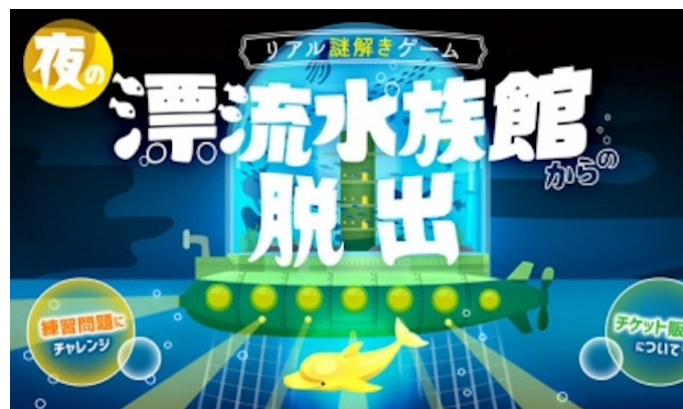


Figure 3.7: Escape from the night drifting aquarium. <https://nazoxnazo.com/hyouryu/>

For this game, it was really special that it was held in the night aquarium, and it was really interesting when the story began, a staff dressed as a dolphin, and during the game, there still have some other characters in the game to interact with players and keep the story continue. However, that's all the connection between the story and the aquarium, at first we thought the riddles would be something about the marine creature, but all of them were Japanese word puzzles, (Figure 3.8) and it was too difficult for the foreigner. Also the time was too short to escape,

people don't even have time to enjoy the aquarium. In the end, we only cleared 2 missions. There were only 6 players cleared all the mission, and some of them is not the first time to play this game.

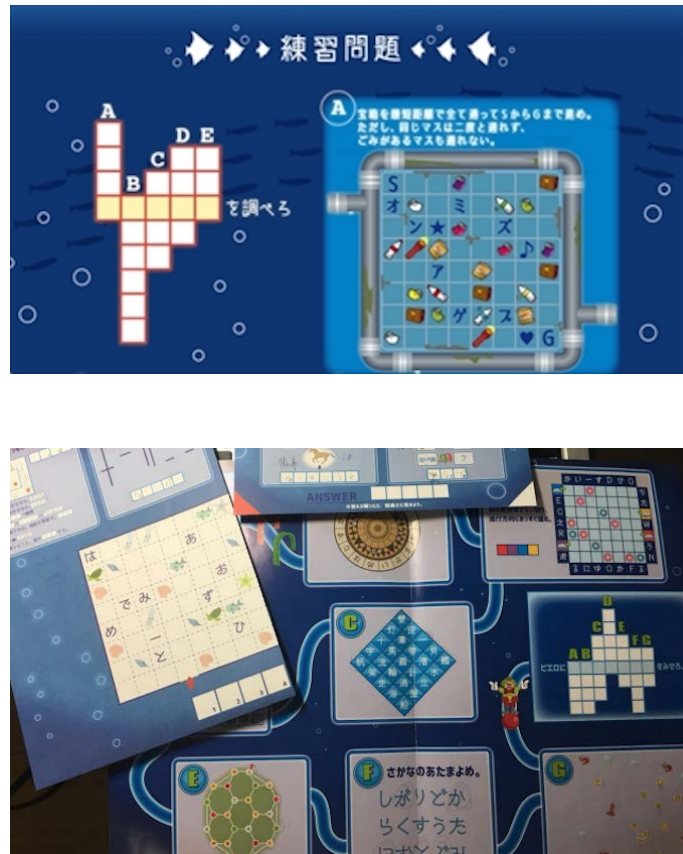


Figure 3.8: World Riddles

Uncover the hidden mysteries of Tokyo

Uncover the hidden mysteries of Tokyo³(Figure 3.9) was a riddle game founded by Metro subway, and was held every year. For this game, players also need to buy the kit first, and the kit include one day-free metro subway ticket.

Basically, this game is also about going around, find the place that been hide

the hint of the riddle, once players could solve the riddle, they can get the hint of the next place. In this game, they don't have a story. All the places in the riddle is on the Metro subway, and usually the place is one of the tourist spot which near the subway station.



Figure 3.9: Uncover the hidden mysteries of Tokyo

For this game, the riddles was perfect for all the riddle lovers, and it was also interesting to explore a new area we never went before. Like in the game, even players did solve the riddle, they may still don't know the answer of the next place, like they only have a message get off at the third purple door, it feels very fun to have no idea about the destination. But this game also had problems, like all the riddle was in the book kit, in one mission, there were three riddles in total,

one is a biggest one to find the station, and another two is about the spot you are going after you arrived at the station. So the players could cheat to find the place by looking the other two riddles first. Also, since all the stations that showed up in the game was far away from each other, so it cost a long time to transfer. It cost our 6 hours in total to clear all the riddles, but this game was still the only one that we succeed. And it felt good to achieve the goal.(Figure 3.10)



Figure 3.10: Game Experience of "Uncover the hidden mysteries of Tokyo"

Results of fieldwork

Based on all the fieldwork, we found out:

Participants will feel more interesting when they have the interactive culture experiences.

Players is easy to be pulled out from the story when the game experience is connected between the fictional world and the real world. It is very important to make a good connection between them.

The riddles shouldnt be too difficult, it will reduce the pleasure of the game experience. Achieve the goal is important.

It's better to use a paper kit as a mission tool. It's important that players could play by their own pace, and feel not being controlled step by step. And they can enjoy the environment around them. Also time limitation is not necessary.

3.3 Redesign the concept of the game

Based on all the research and field work we did, our concept is to improve younger generation's interest about their traditional culture through design a new game experience Do you remember ? In this game, we will combine the AR technology, storytelling, and riddle kit together, design 8 missions about Hakka's history, religion, agriculture, food, language, and water sources culture. Through missions and letting them exploring the Xinwawu area by themselves. To make players could learn the Hakka traditional culture and enjoy the historical site in a new way.

3.4 Game Contents design

Since we are combining the AR technology, storytelling and riddle kit together, in order to maintain the continuity of the game, to avoid pulling player out from the story, we decided to design the riddles as a part of story. For the players, to make it easy to understand, the whole game's process is to solve the riddle in the paper kit, find the right place in the Xinwawu area, using AR camera to do the mission, learn the Hakka culture and then back to the kit to find the next place until the story end.

Riddle kit Design

Except the paper kit is popular in the reality riddle game. One of the reason that we choose riddle kit as a part of our game was because we think if we design everything on the smart phone, then the players need to follow the instruction step by step, and once they stuck in one mission, it's easier for them to lose patience and give up. Another reason is our story was set in 100 years ago, if our players could have something old and real in their hand it would have a stronger connection between players and our main character .

About how to make riddle kit(Figure 3.11) into a part of our story, after discussed with my teammates, we all agreed to design it as our main characters diary. And all the riddles will be hidden in the contents of her dairy, also all the riddles is about Hakka traditional culture, by solving riddles to find mission places. By holding her dairy, players could learn a part of her daily life as Hakka people. But not like the normal riddle kit, without the instruction at the beginning of the

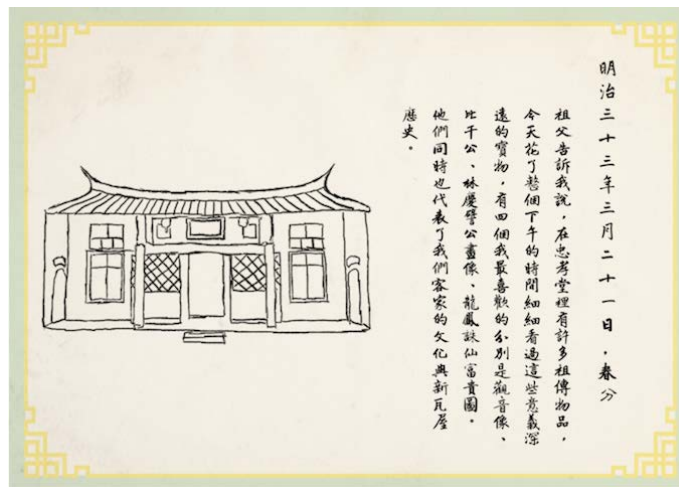


Figure 3.11: Diary Design

game, players won't know how to use it, it's looks more like a normal diary of Hakka people. Also after the game, it could become a souvenir of Xinwawu area that players could bring it back to home.

AR Application



Figure 3.12: AR Experience

Based on all the research we did, Since the Taiwan's younger generation is

obsessed with their smart phone and AR game, so our game was designed to be an AR application(Figure 3.12), players need to download it first and start the game.



Figure 3.13: AR Experience2

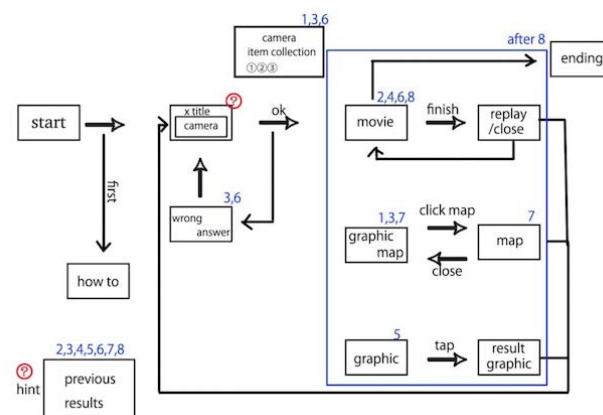


Figure 3.14: System Design

We use this application to give player instructions and hint in case they get confused about what they should do. (Figure 3.13)And in this application, it included AR camera, after players found the right place through the riddle, they will use the AR camera to start the mission and learn Hakka traditional culture. Also we use this application as a way to show animation to players, to let them

could have a better understanding of the story and Hakka culture. (Figure 3.14)

For the application's system, to keep it simple, we only have 2 buttons on the screen, one is AR camera, players will use it to scan different elements in the specific place to do the mission. Another one is about the hint, players could use it when they get confused about the riddle or mission. And if they clear the mission, it will show the animation automatically, if the player couldn't clear the mission, it will stay in camera, and they can use the hint button to get help.

Mission Area

We designed 8 missions in total. 7 of the them is in Xinwawu area, every spot in connected with different Hakka culture, such as, players will go to find the farmland to learn the agriculture culture of Hakka, to find the well remain to learn the old Hakka lifestyle. On the last mission, players need to find the Small auditorium by themselves. Outside the Xinwawu area, to get to there, players will via the way of several Hakka historical spots too, and all of them was included in the game. (Figure 3.15)



Figure 3.15: Xinwawu map

The first version of story design

At first we wanted to create a story that our main character is a ghost, who dead at the Xinwawu house, and she was too sad that her soul couldn't live that area,

and she lost her memory, so at the very beginning, it's was one day our player meet our main character (Taomei's soul) (Figure 3.16)and started to help her finding her memory and leave this world, and during this process of finding memories to learn Hakka culture. However, after we showing our story and character to the people who is from Hakka, some of them feel offensive, and a little bit creepy that there is a ghost in the historical site because in Hakka people's religion culture, auspicious is very important, and ghost usually represent inauspicious.

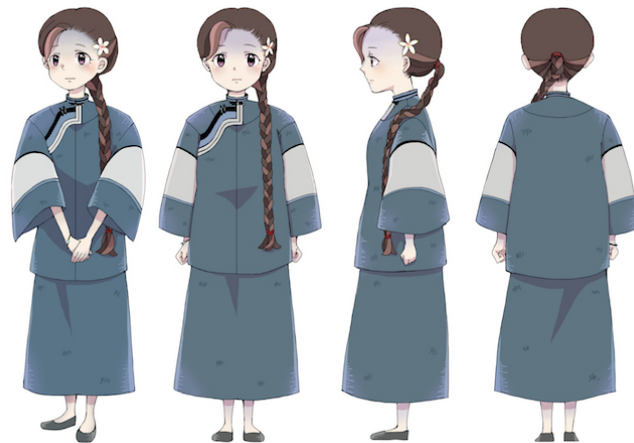


Figure 3.16: The first version of character design

The second version of story design

We changed it to make players return to 100 years ago, to get to know Taomei's life, for this time, Taomei is a real person, we want to create a love story but not a normal one, so in the end of story, she will marry someone else, and her first love will just stay in her memory. But when we tested it, found out that too many characters will confuse the players about the whole story, and too many characters will make riddles become complicated too, so we decided to only have three characters in the story, Taomei who is our main character, Zhengxiong who is Taomei's first love, and Taomei's father. (Figure 3.17/18)

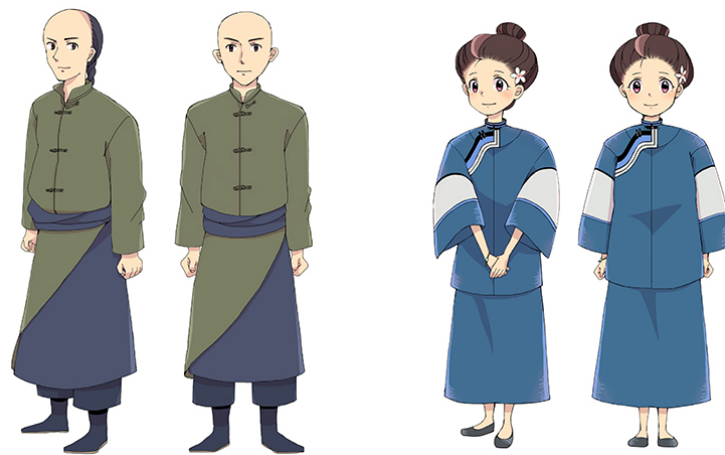


Figure 3.17: Character design



Figure 3.18: Do you remember?

The final version of story and mission design

The beginning

Our target is the young generation who is living near Xinwawu area. They could come to Xinwawu anytime they want to play the game.

For the start the game, the only thing they need to do is to download the game application Do you remember? on the Apple store, then they will watch an animation video to start the game, In the video, our main character Taomei was crying, and burying her diary under a big Banyan tree. About why she was crying, players need to find the answer by themselves. In the video, players could know that they need to find that dairy first.



Figure 3.19: The scene of beginning

Taomei's life mystery and Lin familys history

A 100 years ago, a girl called Taomei, who is Lin family's posterity, she is 15 years old and been living in the xinwawu house since she was born. Everyday she was helping her family doing the farm work, cooking, sewing. Sometimes, after dinner, Taomei's grandfather will tell Taomei about the stories of their ancestor. For that day, he was telling her the old treasures in their family. These treasures are all passed down from generation to generation by Lin family and testify to the history and development of Hakka.

All the riddles was hidden in the diary, and our mission one was started with page one. It was March 21st, Meiji 33 years, spring equinox. That day, Taomei wrote down, My grandfather told me, there are a lot of ancestral items in the Zhongxiao Hall, and I spent a whole afternoon today to learn these items and the meaning behind them, for me, I have four favorite things, Bigan's portrait, Lin Qingbi's portrait, Guanyin's Portrait, and the dragon and phoenix figure. It is very important for the Hakka culture and Xinwawu history.



Figure 3.20: Lin familys treasure

The first riddle is about to find the Zhongxiao Hall, if the players could solve the riddle just by the information from the diary, they could use AR camera to scan the diary, to get the hint for the place and the mission, and during the mission players will know why Taomei said those four historical artifacts were important and what those things means for the Hakka people. Such as Lin Qingbi's portrait. Lin Qingbi is Sun Tangong's grandson, one of the Lin familys ancestors. Ancestors are significant important for the Lin family, they will put all their ancestors memorial name tablet in the center of this room, and worship it every morning. Guanyin's portrait. Guanyin is an East Asian bodhisattva that Hakka people believes in their religion. For them, Guanyin is the God that controls family's safety and happiness. They put this portrait on the right side of their ancestors name tablet, and pray to it every morning too. And dragon and phoenix figure, in Hakka culture, dragon and phoenix are auspicious creature, and they also represents the blessing for the children to have a brighter future. (Figure 3.20)

During this mission, we want our players could learn the historical artifacts by

following the hint and find it by themselves, remember the information through the story, not like walking around in the museum without remember anything.

Encounter with Zhengxiong and the important water source



Figure 3.21: Water source

Tao Mei was busy with domestic chores every day. One day, as usual, she went to the water well where Lin's family lived to fetch water someday. Zhengxiong was accidentally found injured and fainted at the side of the well. Taomei was very kind that she brought Zhengxiong back home and had a physical examination by the doctor. The doctor said that Zhengxiong was severely traumatized and need

a long period of rest. Tao Mei left him at home to take care of his injuries.

In the diary, it was April 5th, Meiji 33 years, Ching Ming Festival. That day, Taomei wrote down, It was raining in the past few days, I was worried about the dam. It called Liu Zhangli which was built by our ancestor Lin Xiankun, it had irrigated more than 300 hectares near the Xinwawu area. Seems like somebody also call it Dangling dam. But this dam only used in farming. We also had a well in our home, it is a normal house using water well. When I went to get some water today, I was freaked out, I thought there was a thief came into our house. I didnt expect it to be

From the hints of the previous mission, players need to guess a word based on the pictures they got and find the well remain's location, after they find it they could scan the well pattern to understand the encounter story of Tao Mei and Zhengxiong in an animation video. During this mission, we want our players could learn how important water source to the Hakka people 200 years ago. (Figure 3.21)

Taking care of Zhengxiong and Leicha experience

Taomei's grandmother always said that Leicha is one of the proud invention of Hakka people. Since Leicha is rich in nutrients. And Tao Mei is worried that Zheng Xiong's injury and cannot eat food directly. So she plans to make Leicha for Zheng Xiong. For Taomei, it was the first time she met a person who is not form Hakka, she was very curious about the man who is full of mystery.

In the diary, it was April 20th, Meiji 33 years, Rainy. Taomei wrote down, It still raining today, in the morning I made Leicha, grandmother always said that Leicha is edible and medical, also can quench your thirst. It is the proud invention of the Hakka people, I hope this cup of tea could make him better. Leach is special for me, cause my father is always reading poems when he is drinking Leicha.

If the players scan the map on the diary, they will get the "mobile map" with the map footprint as a hint to find the next game location.(Figure3.22), After players found the place, they will see there are five cups containing tea, sesame, pumpkin seeds, peanuts, and rice ingredients through scan the cups in order, players can see how Taomei made Leicha for Zhengxiong, step by step. First, they can see Taomei is putting the tea into the bowl, mash it until the scent of the tea could be smelled. Second, put sesame into the bowl, mash it to get some oil, it will make Leicha taste better. Third, put pumpkin seeds into the bowl, still need to mash it until it become pumpkin powder. Fourth, put the peanuts into the bowl, it is the most difficult ingredient to mash, but the smaller you crush it,

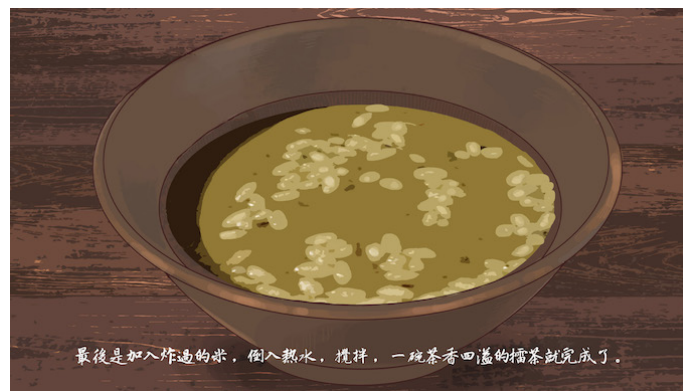
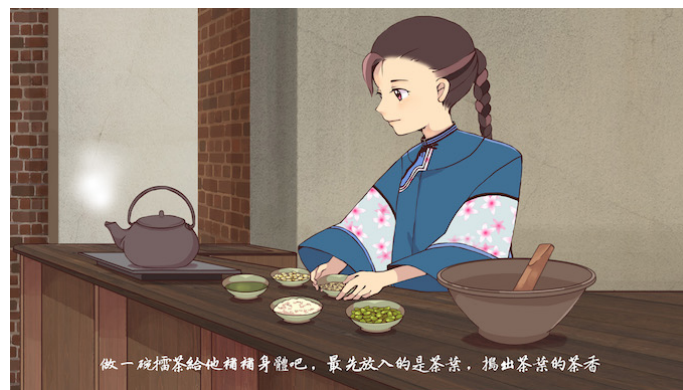


Figure 3.22: Leicha Making process

the better it taste. Finally, put the fried rice into the bowl and add hot water, mix it, finished.

During this part of story, we want our players could learn Hakka people's tea culture, and remember the receipt after the experience. The ingredients we been using this time was a very basic receipt of Leicha. For the Hakka people, they have hundreds of receipts. As an example, if they eat Leicha as a normal meal. First they will add a little tea and grind it into hot water to become tea soup. Then add ingredients like: fried bean curd, dried radish, celery, and parsley. Mixing it with rice, and then eat it. They also have the sweet-tasting Leicha version which is eaten as sweets at 10 o'clock in the morning or at 3 o'clock in the afternoon. This is the predecessor of the Leicha beverages that are currently sold in the market.

Taomei's first love and the agriculture of Hakka

That day, Tao Mei worked in the fields as usual. After a long period, Zhengxiong finally got out of bed, and went to meet her to say thank you for keep him at home and taking care of him. As a thank you present, Zhengxiong gave her a Tong blossom. They had a long conversation that afternoon, Taomei mentioned that Hakka people had the custom of worshipping the God of earth for peace and health. They made an agreement that will go to worship the God of earth together, once Zhengxiong's injury is getting better.

In the diary, it was May 6th, Meiji 33 years, Sunny. Taomei wrote down, I am so tired today, have to finish all the work on the sunny day. But the point is! He is feeling better, and today he gave me a flower, although it seems like he just picked it somewhere, but the blossom is really beautiful. I want to try to use it and make a beautiful bookmark.

According to the answer of the tea-making process solved by the previous mission, players need to find a board which located in the farmland. Scanning the board that can watch a video about Hakka agricultural scene. During this part of the story, we want players can learn the contribution of Hakka women in their agriculture. (Figure 3.23) In traditional Hakka society, men are responsible for going out to work and the women are responsible for assisting them. Therefore, in order to allow men to acquire fame and cultivate family values, the Hakka women in the past had to carry out a lot of chore work in the fields, and also all the housework for the family at home.

Therefore, they did not have the custom in binding small feet. For the women, they have no right to speak because the ethnic groups require that they must be

a good wife who supports and listens to their husband.⁴



Figure 3.23: Farmwork

Fall in love and the religion culture of Hakka

After Zhengxiong's injure was almost cured, Taomei invited him to go to worship the God of earth together. Each of them did draw a lot overthere, it was a pray of their relationship, the consequence of the pray were really good, but they were too shy to tell each other. After that day, Zhengxiong was thinking about to tell Taomei how much he likes her.

In the diary, it was July 22nd, Meiji 33 years,Hot. Taomei wrote down, Under the busy schedule, we did not have the chance to go to the temple until today. Hoping that the God of earth would not be angry of us. But in fact, we Hakka people also believe in many Gods, for example, Bigan, King of three mountains, Mazu and so on Today, it is special to me, we prayed for the good harvest, and drew a lot together.

During this part of the story, we want our players could learn the religion culture of Hakka. Until nowadays, Hakka people still believe in a lot of God.The first is the worship of heaven and earth. The worship of heaven is called "God", or Emperor of heaven". There is no statue of the Gods. Only use red or wooden tablets and write the word God on it. If they go to the temple to worship God, they must burn incense, kneel down and worship the God outside the door. When they worship the ancestors on New Year's Eve, also they must first worship the

God. When they get married, they also need to worship heaven and earth. The worship of the land for the Hakka people is been transformed into the worship of the protection of God. They call the earth God (Figure 3.24) as Bogong Gongwang Chenghuanglaoye. Before the Hakka people held festivals or engage in production activities, they must pray to Bogong for the blessing of agricultural harvest and the safety of people and livestock.



Figure 3.24: Pray to the God of earth

I like you and the language culture of Hakka

Zhengxiong and Taomei went to the lantern festival together. On that day, Taomei gave him a Tong blossom bookmark as a present. Zhengxiong was prepared a lantern riddle for Taomei, he wanted to use to tell Taomei how much he likes her, he even learned how to say I like you in Hakka language. But unfortunately, they met Taomei's father on the lantern festival.(Figure 3.25) Taomei's father doesn't like foreigners because the history problem between Hakka people and other minority, He was mad about they were being together, he told Zhengxiong to stay away from his daughter and drove him away.



Figure 3.25: Lantern Festival

In the diary, it was September 8th, Meiji 33 years, Mid-Autumn festival. Taomei

wrote down, The Mid-Autumn festival of this year, our community held a small lantern festival to celebrate together. And my father found out me and Zhengxiong were together in this festival, he was furious, things got awkward, and it all because we do not have the permission from the elders, and in our culture, it is not right. My father was really angry, and I could not say anything, I just silently watched Zhengxiong left.

During this part of the story, we want our players could learn some Hakka language through a riddle game, which is Zhengxiong prepared for Taomei. In the game, Mandarin need to be translated into Hakka language. The Hakka language in Taiwan is mainly composed of four-county accent, sea accent and land accent. However, the four-county's tune is more powerful and more used in the public. The pronunciation of the same word in the four-county is similar to the sea accent and land accent. However, the tune of the tone is opposite. When people use four-county and sea accent to read the same sentence. There will be a dissonance in the same word.

The surprise and war history

Zhengxiong, who was driven away by Taomei's father because of the was history between their ethnic group. He saw Taomei was burying her diary under the Banyan tree before he leaves. Zhengxiong did not want to see Taomei quarreled with her father and being upset all the time, and he also didn't want to end this relationship too. After Taomei left, he dug out that diary. Left a letter on the last page to Tao Mei. Made an appointment with her. If she still remember him after 50 years, then let's meet again.

The last page of the diary, it was October 24th, Meiji 33 years. Zhengxiong wrote a poem on it, You can not spell out our love, a broken heart, we are separated and have to start a new life without each other, we only could miss each other but not meet again. It was a acrostic poem in Mandarin, the first word in each line could form a message, and the message is Make a heart shape

During this part of the story, we want players can learn the war history between Hakka people and other ethnic group, that was the reason why her father got so angry and why Zhengxiong had to leave. It was the war called Min Yue Xie Dou. There were some reasons to cause the war. Firstly, A large number of immigrants came to Taiwan in the middle of the Qing Dynasty, and there were many conflicts of between Hakka and other ethnic groups. Such as irrigation water source rights, cultivation rights, and temple building rights, etc. Secondly,

when the different ethnic groups were gathering together on a same town, there will be conflicts of different interests. Thirdly, there are cultural differences between different ethnic groups. Finally, The bureau didn't have enough power to control different ethnic groups. They even ignoring and confliction between the two parties, aiming to strengthen their own power.

Although under the rule of law, setting fire and destroying housing estates are more common than killings, a lot of people still died during the fighting. The result of the war determined the distribution of ethnic groups in Taiwan. the winners often occupied the houses of the defeated ones and converted temple beliefs. The loser usually migrates to a poorly-located remote village or gradually assimilated with the winner. Hakka was the loser during that war, and it was one of the reason that they moved into the mountain. After the fight, all ethnic groups reinforced various fortifications in order to defense and prevention (such as the Sanheyuan house in Hakka culture). This opposition between ethnic groups has made economic and cultural communication became more difficult. And that's the reason why Taomei's father doesn't like foreigners, they lost lots of things during that war.



Figure 3.26: The War History

Meet again and other historical site of Hakka

50 years later, Taomei found her diary accidentally, and saw the letter that Zhengxiong left to her. It was wrote on October 24th, Meiji 33 years. Dear

Taomei, it was a little bit cold today, How are you? Is everything alright? I never thought this is the ending that we could not be together. Do you still remember that lantern festival we went together? I supposed to tell you that I like you, I really do. From the day you saved me until I got cured, during that period, I was really happy everyday, and thank you, thank you for telling me so many stories about Hakka, about you. I really wanted to be with you, to getting old together, but we could not. I could not go back, but I still hope that one day we can meet again, if you find this letter, then maybe we still have a chance to meet. This is a map, I will wait for you, forever.

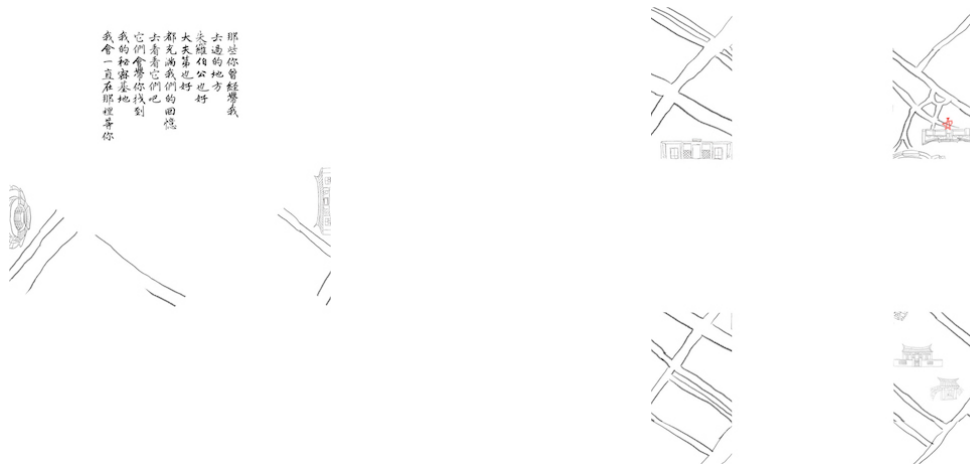


Figure 3.27: Final Destination Map

Zhengxiong also wrote down the hint on the map,(Figure 3.27) Those places that you have taken me to, Zhu Lobogong, or Da Fu Di, those places are full of our memories, please go there first, it will lead you to find my secret place, I will be there, wait for you.

By following the map, and passing by all the spots they went together before. Taomei was very touched, he didn't forget her, he didn't forget their memories. After she went to the meeting place, she saw the bookmark she had given Zhengxiong 50 years ago and heard Zheng Xiong's confession. He told her the reason for leaving and where did he went after leaving. And finally had the chance to know how much Zhengxiong loved her.

During this part of story, we want our players also could go to other historical places of Hakka, to learn more and to understand Hakka culture better. And also we designed a open ending for our players. The story ends by a sound of a person

who was opening the door, maybe that's not Zhengxiong, or maybe that is him, they finally meets again.

Notes

- 1 Mysterious City Under A Spell
<https://www.nazotown.jp/show/ligare/>
- 2 Escape from the night drifting aquarium
<http://nazoxnazo.com/hyouryu/>
- 3 Uncover the hidden mysteries of Tokyo
<http://realdgame.jp/chikanazo/3/>
- 4 Dianwan, Zhang *Taiwan: Hakka Women*, (Dianwan 2004)

Chapter 4

Proof of concept

On November 16, 2017. Our game application Do you remember? was officially released. Our application only support IOS system. So if player's iphone or ipad's system is IOS 8.0 or after that, they can download in the Apple store. And go to the Xinwawu area whenever they want to play the game.

4.1 Hakka VAR: Hakka cartoon Wisdom creation event



Figure 4.1: Hakka VAR Event

On November 18, 2017 and November 19, Hakka Affairs Council sponsored an event called "Hakka VAR: Hakka cartoon Wisdom creation, at Taiwan International Art Village in Taipei City. Hakka VAR: Hakka cartoon Wisdom creation was an event that included the application of contemporary digital technology in

the preservation of Taiwan's early comics, the creation of comic virtual games, the construction of Hakka Cultural Museum, and the exploration of Hakka folk song collections. Also during the event they invited several experts and scholars to discuss Culture developments Potential and Prospect by connecting with Science and Technology. Also our project Do you remember? was invited to participant this event too. We created a short version of our game experiences, to let the people who couldn't go to the Xinwawu area can also enjoy the Hakka traditional culture and Xinwawu historical site during this event period.

4.2 SXSW EDU: South by Southwest Education



Figure 4.2: SXSW EDU Festival

South by Southwest Education is a four-day annual conference that held in the beginning of March in Austin, America. To provides an opportunity for education professionals, industry leaders and policy makers who is looking to collaborate, create and change about how to teach in education industry. On March 5-8th, 2018. Our project Do you remember? was also participated in this festival to show a short version of our game experiences, to let the foreigners can also enjoy and learn the Hakka traditional culture during this period.

4.3 Evaluation

On December 9 and December 10, 2017. In order to verify the achievement of our concept. We prepared the whole game experience for our test subjects in Xinwawu area for four students who are currently studying at the Taiwan Jiaotong University.

We used the observation and interview survey as the method to evaluate our projects in 3 points. First one is about to check whether our story design and the Xinwawu historical site were combined properly, to see if our test subjects were having a feeling about pulling out from the story or not. Second one is about to check by putting our story into riddles and game missions, our test subjects were having fun or not in this new game experience. The last one is about to check our test subjects were learned something or not about Hakka culture through our story and culture missions. During this process, we took several videos during their game experiences to observe our test subjects. Also we prepared several questions which related the three point about our achievements of the story to ask our test subjects after their game experiences.

The process of game testing

Test subjects go to Xinwawu area

Use their own smartphone to download the game application Do you remember? in the Apple store

Game start

Test subjects playing the game, solving riddles, clearing missions

The end

The interview of our their game experience.

Interview

During these two days, we observed and interviewed 4 students from Xinzhu county.

Test subject 1

Miss. A is a graduate student of Taiwan Jiaotong University, Hakka studies(24 years old). She lives in a dormitory at a university's campus that nears Xinwawu

area. Because she is from Hakka studies, therefore there were classes that she was been taking at school. But she said, even she was taking classes about Hakka culture, she still doesn't have interest in Hakka history. About the AR game, she said, all the AR game she played before was boring. However, she likes playing video games and watching Japanese animation. And also she loves riddle games, she had participated twice in reality riddle games. Even she lives near Xinwawu area, but she never visited there.

Question1: Before playing this game, how much knowledge of Hakka culture do you have retained?

Answer1: I heard of it before, but only knew some basic things, like some food of Hakka is famous

Question2: Through the story of the game, do you think learning traditional culture become more interesting than before? Did you learned something from the story?

Answer2: Yes, for sure. Even I am studying in the Hakka study, I still do not have interest in Hakka traditional culture, It is boring to me. And in the story, the history war part was impressive to me, the reason that Taomei and Zhengxiong couldn't be together, I did not know that before, the war between Hakka people with other ethnic group.

Question3: By combining the story with the real historical site, do you think it made Xinwawu area became more attractive than before? If we have a new version of the story do you want to come again?

Answer3: Yes, all the scene in the story were very similar with the real Xinwawu area, when I was walking around, I would not be pulled out from the story, it is interesting to see the story world in real. And yes, I want to bring my family too.

Question4: Which part of the story left the deepest impression on you? And why?

Answer4: I like the first mission, finding treasures,I like the connection between the old story with finding it in the real world

Question5: Through putting story into riddles and game missions, do you think it made learning Hakka culture became easier and more interesting?

Answer5: Yes, story could make me focusing on what I saw and it is easier to remember.

Question6: Do you have any comments about the story and game experience?

Answer6: I think the knowledge of Hakka culture were too basic, you can add

more things which people do not know at all, it will be more interesting.

Test subject 2

Mr. B is a graduate student of Taiwan Jiaotong University too(24 years old). But not from Hakka studies. So he almost has no opportunity to learn Hakka culture, He only knows a little bit about Hakka's architecture culture and food culture. He likes sports games, riddle games, reading books and watching movies. He doesn't watch animations very often, he only watched the Disney's animation before. Talking about the AR games, He said he only played Pokemon GO, but he got boring very soon because the simple actions of the game. Also, He never visited Xinwawu area before.

Question1: Before playing this game, how much knowledge of Hakka culture do you have retained?

Answer1: I often saw some old buildings of Hakka on the street, that's all.

Question2: Through the story of the game, do you think learning traditional culture become more interesting than before? Did you learned something from the story?

Answer2: Yes, especially the food culture part. It left a deep impression for me when I was watching Taomei made Leicha step by step.

Question3: By combining the story with the real historical site, do you think it made Xinwawu area became more attractive than before? If we have a new version of the story do you want to come again?

Answer3: I never came to Xinwawu area before, I thought it was just a huge area with old remains. But through the story, for me it is more like a area tour, and I learned a lot from it, it is a special place. And yes, I want to come again.

Question4: Which part of the story left the deepest impression on you? And why?

Answer4: I like the religion part mostly, through the diary, I learned the Hakka people believe in so many gods, I did not know that before, and when Zhengxiong and Taomei drew a lot together, it was also interesting too.

Question5: Through putting story into riddles and game missions, do you think it made learning Hakka culture became easier and more interesting?

Answer5: Yes, I think it was connected very well, I like to thinking by myself, solve the mystery to find out the story between Taomei and Zhengxiong, the process of learning is interesting.

Question6: Do you have any comments about the story and game experience?

Answer6: I hope it could have audio or music in the animation, it will make the story more vividly.

Test subject 3

Miss. C is also one of a graduate student in Taiwan Jiaotong University, Hakka studies(25 years old). Through taking classes, participating events of Hakka, and helping professor's Hakka projects. She have learned some basic culture knowledge. For her, she doesn't like difficult games, also doesn't watch animations very often. And never played AR games or riddle games before. She visited Xinwawu Area before, but still don't really remember it.

Question1: Before playing this game, how much knowledge of Hakka culture do you have retained?

Answer1: I know some Hakka food, went to some historical sites when I was a child, but I'm not really interested in it.

Question2: Through the story of the game, do you think learning traditional culture become more interesting than before? Did you learned something from the story?

Answer2: Yes, I like the Leicha culture, watching Taomei making Leicha made me want to try to make it at home too, it seems easy to make.

Question3: By combining the story with the real historical site, do you think it made Xinwawu area became more attractive than before? If we have a new version of the story do you want to come again?

Answer3: Yes, I am from Hakka study, and came here once or twice before, but I only went to the Zhongxiao Hall, this time, through the story, I find a lot of other interesting places too, which was fun. And yes, if it has a new version, I want to play it with my friends.

Question4: Which part of the story left the deepest impression on you? And why?

Answer4: I like the final part of the story, the memory between Zhengxiong and Taomei, I went to other historical sites too, not just in the Xinwawu area, it is the first time that I get to know there are so many spots about Hakka culture.

Question5: Through putting story into riddles and game missions, do you think it made learning Hakka culture became easier and more interesting?

Answer5: I like how story could combined with different game missions, it is like you never know what will happen next, that is interesting to me.

Question6: Do you have any comments about the story and game experience?

Answer6: I want the story and the game could be divided in different level, and the story of each level is different. So I can chose to play in a easy level or difficult level, like if it is easy, maybe I could finish it in one hour, if it is difficult, I can play it a whole afternoon. And I can play it several times.

Test subject 4

Mr. D is also one of a graduate student in Taiwan Jiaotong University, Hakka studies(20 years old). He has relatives who are from Hakka, but he still did not know their culture very well. He has the interest about traditional culture, however, except school, he does not have a chance to learn Hakka knowledge. He likes sports game, computer game, but he never tried riddle game before, and the only AR game he played is Pokemon Go. He never visited Xinwawu area before.

Question1: Before playing this game, how much knowledge of Hakka culture do you have retained?

Answer1: I have some relatives from Hakka, but still don't know it very well.

Question2: Through the story of the game, do you think learning traditional culture become more interesting than before? Did you learned something from the story?

Answer2: Yes, Through the story, it is not like I have been forced to learn traditional knowledge, it make me want to learn it. And about what I have learned, I did not know Lin familys history before, through the treasures of their family, it is the first time I learned what those things mean for them.

Question3: By combining the story with the real historical site, do you think it made Xinwawu area became more attractive than before? If we have a new version of the story do you want to come again?

Answer3: Yes, I think it is a very effective way for people who want to have a tour in Xinwawu area. And yes, Xinwawu is a huge area, I would like to try new version and play it again.

Question4: Which part of the story left the deepest impression on you? And why?

Answer4: I like the Leicha part most, because it is different with the other part, it has a connection with my real life. When I was watching her making it, I want to try too, and also thinking about if I could add other ingredients, make other recipes of it.

Question5: Through putting story into riddles and game missions, do you think it made learning Hakka culture became easier and more interesting?

Answer5: I like the story which is processing in outdoors, it is like you continue the game, go to places that the character lived before, like you have a connection with the story and the place, made the things that I learned became special.

Question6: Do you have any comments about the story and game experience?

Answer6: I hope there will be more hint in the game, and the instruction should be specific. Because when I got stuck in the middle of the game, I do not know what to do next, and I could not continue the story too, I just walking around and being confused, it will make me want to give up.



Figure 4.3: Game Experience

4.4 Test Results

Based on the observation and interviews of our test subjects. First, we found out players like to have a culture experience in the historical site, and they feel they are not being forced to learn anything which is important and it's more interesting to learning it by themselves . Second, through the story, players was getting interested in the things they don't have interest before like the war history of Hakka. Third, by combing the story with the Xinwawu historical site together, players get more curious about what will happen in the game, and the normal things was becoming special to them. Finally, through the story and game missions to learn traditional culture, can increase players learning speed and left a deeper impression in their mind.

4.5 Future improvement

From our testing results, we also found there are several improvements we could do in the future for our project.

Make the instruction more clearly at the beginning of the game, add more hints, because our test subjects mentioned that it was difficult for them to understand how to play the game at the beginning, and it make them want to give up.

Add a stronger personality to Zhengxiong. Since all our test subjects mentioned they don't remember Zhengxiong very well. And Zhengxiong suppose to be an important character for them. Like to design him to be a person who likes food very much, often eats a lot Hakka food, to make players could remember him.

To design different levels of the game, to make it more flexible. At first we thought the achievement feeling was important, so we designed the story and riddles in a basic level. But from our test results, we found out, they like to have different choices, control their time.

To add more culture knowledge in the game. Our test subjects told us, during the game experience, they was getting very interested, but the culture information was very basic, they want to learn more.

Chapter 5

Conclusion

In this project, as a starting point of my concept on improve Taiwan younger generation's interest about their own traditional culture, to design a game experience which is suitable for any traditional culture. This time, based on the Xinwawu area (one of the Hakka historical site), depending on all the research, fieldwork in Taiwan and Japan, by combining the AR technology, storytelling and riddle kit together, we designed a new interactive AR game experience *Do you remember. Do you remember?* is a game experience that connecting the fictional world with the real world. Through an old love story about Hakka people and culture riddles, to let players could explore the Xinwawu area by themselves and learn all the information without following a guide. Based on the observation during the game experience and the interviews of our test subjects. As the results, it's been proved that the traditional culture is not just something in the textbook and museum. Instead of the old traditional education mode, through combining the story and Xinwawu area together by using the AR technology to let visitors explore the historical site, and it will leave a deeper impression in their mind, and improved their interest about learning culture knowledge by themselves. By using story and riddles could also improve target person's interest about the things they don't have interest before, like old culture history, and it's easier to remember the culture knowledge. Also, by playing with player's own pace, it could make game experience become more enjoyable.

5.1 Future work

This time, To improve Taiwan young generation's interest about Hakka traditional culture, our project was designed based on the Xinwawu historical site in Taiwan. However, not just Hakka culture, every traditional culture is facing the same problem which is there is no-one want to continue learning it, and some of them

is even on the verge of loss. To solve this problem, our project's contents, through designing a game experience which combined storytelling, new technology and riddles together, it could create a new learning experience for other traditional culture at any place too.

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